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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,574	12/04/2003	Shihe Fan	48679	5066

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EXAMINER

PARA, ANNETTE H

ART UNIT	PAPER NUMBER
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1661

MAIL DATE	DELIVERY MODE
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06/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/726,574	Applicant(s) FAN ET AL.	
	Examiner Annette H. Para	Art Unit 1661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2007.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-32 and 45 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-10, 12-32 and 45 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Listing of the Claims

Claims 1-10, 12-32 and 45 are examined. Claims 11, and 33-44 have been cancelled.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-10, 12-14, 16, 18, 20, 23, 24, 27, 29-31, remain rejected and claim 45 is under 35 U.S.C.102 (b) as being clearly anticipated by Fan et al. (United States Patent No. 6, 444, 467 September 3, 2002). The rejection is repeated for the reasons set forth in the office action mailed on July 5, 2006.

Applicants' arguments filed April 5, 2007 have been fully considered but are not found persuasive.

Applicants argue that the process of Fan et al., while capable of successfully converting embryos to acceptable seedlings, has a certain failure rate. This is due not only to the lack of vertical orientation but also because the nutrients essential for continued germination and growth of the embryo have to be supplied intermittently from an external source and this may not be done on a regular basis. Moreover, the nutrients being applied in the form of a solution, do not remain in contact with the embryo for very long and may drain away or evaporate before full utilization of the nutrients by the plant.

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This is not found persuasive because the prior art does not have to show superior result, the reference has only to teach the claimed invention. Even evidence would not overcome this rejection.

Applicants argue that the present invention addresses these problems. As shown in Fig. 2 of the present application the surface of the growth medium is provided with a droplet of a flowable semi-solid medium to form a pool that contains both nutrients for the plant and solid particles

This is not found persuasive because applicants are arguing limitations which are not claimed. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicants argue that the Fan et al. 's section identified by the examiner relates to the pre-germination of the embryos and not to the sowing of the embryos following pregermination for the purpose of converting the embryos into autotrophic seedlings. In Fan et al. the pre-germinated embryos are subsequently dried before sowing in soil or the like. Thus, this section of Fan et al. is not relevant to the process of claim 1, which relates to the sowing of the embryos for growth into seedlings.

This is not found persuasive because applicants are reminded that the transitional term "comprising" is inclusive or open-ended and does not exclude additional unrecited steps. See MPEP 2111.03. Furthermore, Fan et al. teach sowing plant somatic embryos onto physical supports in a manner such that the embryos are not submerged in the liquid and the liquid medium forms a thin capillary layer around the embryo as a film. Fan et al. teach the development of the somatic embryos into seedlings (column 8, lines 7-8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

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obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15, 17, 19, 32 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Fan et al. (United States Patent No. 6, 444, 467) in view of Pierik (In Vitro Culture of Higher Plants 1997). The rejection is repeated for the reasons set forth in the office action mailed on July 5, 2006.

Applicants' arguments filed April 5, 2007 have been fully considered but are not found persuasive.

Applicants argue that Fan et al. supply nutrients after sowing has taken place and preferably after the embryo has been covered by a layer of growth medium. In such condition, a gelled medium would likely sit on top of the covering layer of growth medium without much or any penetration. A skilled artisan would therefore not think of using a gelled medium in the procedure of Fan et al.

This is not found persuasive because one ordinary skill in the art would have modify the method of Fan et al. by adding agar mixed with the nutrient medium before covering the embryo with a layer of growth medium. One ordinary would know that the gelled medium would sit on top of the covering layer.

Applicants argue that examiner suggests that a skilled person would modify Fan et al. by adding agar knowing that such gelling agent serves as a binding agent for nutrient and water reducing the need for high humidity conditions. However, since Fan et al. stress the use of high humidity conditions for several days after sowing such modification would be directly contrary to the teaching of Fan et al. The high humidity is "to facilitate somatic embryo imbibition and germination". The success of a gelled medium would in such circumstance be unpredictable, and would require experimentation and testing.

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This is not found persuasive because a skilled person knowing that gelling agent serves as a binding agent for nutrient and water reducing the need for high humidity conditions would have also known that because the water would have been bound to the embryos, hence, no more need for high humidity.

Claims 21, 22, 25, 26, 28 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Fan et al. (United States Patent No. 6, 444, 467) in view of each of Gupta (United States Patent 5,563,061 1996) and of Tremblay et al. (Plant Cell, Tissue and Organ Culture 42: 39-46 1995).

The rejection is repeated for the reasons set forth in the office action mailed on July 5, 2006.

Applicants argue that they do not agree with the examiner's position (final office action sent on 1/5/2007 p. 6) and point out that the rejected claims all depend, directly or indirectly from claim 1 and it is believed for the reasons given above that claim 1 is neither anticipated by nor obvious over any references cited by the examiner.

This is not found persuasive because of the reasons given above.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Future Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Annette H Para whose telephone number is (571) 272-0982. The examiner can normally be reached Monday through Thursday from 5:30 a.m. to 4:00 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anne Marie Grunberg, can be reached on (571) 272-0975. The fax number for the organization where the application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about PAIR system, see <http://pair-direct.uspto.gov> . Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Annette H Para

6/5/2007



ANNE KUBELIK, PH.D.
PRIMARY EXAMINER